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**BACKGROUND****1. Technical Field**

The examples of embodiments relate to a data storage device for the storage of digital information such as computer files, digital music, digital video etc., and, in particular, to a data storage device to which data can be written and read back an unlimited number of times.

**2. Description of Related Art**

A wide range of data storage devices has become available in recent years employing a range of media for a range of digital data storage applications. Data storage devices are designed which are adapted to some of a variety of operational characteristics, including capacity, speed of access, write/rewrite ability, ability to retain data stably over time (with or without power), size, robustness, portability and the like.

Known data storage devices include magnetic tape storage, magnetic hard disk storage, and optical disk storage. All offer advantages of good storage capacity and relatively rapid data access, and all can be adapted for ready write and rewrite of data. All require moving parts in the form of electromechanical or optical readers. This can limit the extent to which devices incorporating such data storage media can be miniaturized, and limit the use of the device in high-vibration environments. Although in each case the surface medium is the key to data storage, the mechanisms involved require careful control of properties also of any supporting substrate. Thus, such devices have to be of carefully controlled construction. Moreover all require the reader to have access to the surface of the device, which can place limitations on design freedom for the device.

**SUMMARY**

It is an object of the examples of embodiments to provide an alternative digital data storage device which offers versatility in alternative situations, in particular for example which